the Tumour as opened: In both the Artiſt has ſo far imployed his Care and Skill, as well in preſerving the juſt Dimenſions as in the Colours and Appearances, that I am left only to wiſh, that in the Deſcription, which I have made, my Pen had not fallen ſhort of his Pencil.——I am, with the greateſt Reſpect,

SIR,

Your moſt obliged
humble Servant,

Jer. Peirce.

V. *An Experiment concerning the* Spirit of Coals, *being part of a Letter to the Hon.* Rob. Boyle, *Eſq; from the late Rev.* John Clayton, *D. D. communicated by the Right Rev. Father in God* Robert *Lord Biſhop of* Corke *to the Right Hon.* John *Earl of* Egmont, *F. R. S.*

——HAving ſeen a Ditch within two Miles from *Wigan* in *Lancaſhire,* wherein the Water would ſeemingly burn like Brandy, the Flame of which was ſo fierce, that ſeveral Strangers have boiled Eggs over it; the People thereabouts indeed affirm, that about 30 Years ago it would have boiled a Piece of Beef; and that whereas much Rain formerly made it burn much fiercer, now after Rain it would ſcarce burn at all. It was after a long-con-

tinued Seaſon of Rain that I came to ſee the Place, and make ſome Experiments, and found accordingly, that a lighted Paper, though it were waved all over the Ditch, the Water would not take Fire. I then hired a Perſon to make a Dam in the Ditch, and fling out the Water, in order to try whether the Steam which aroſe from the Ditch would then take Fire, but found it would not. I ſtill, however, purſued my Experiment, and made him dig deeper; and when he had dug about the Depth of half a Yard, we found a ſhelly Coal, and the Candle being then put down into the Hole, the Air catched Fire, and continued burning.

I obſerved that there had formerly been Coal-pits in the ſame Cloſe of Ground; and I then got ſome Coal from one of the Pits neareſt thereunto, which I diſtilled in a Retort in an open Fire. At firſt there came over only *Phlegm*, afterwards a black *Oil*, and then likewiſe a *Spirit* aroſe, which I could noways condenſe, but it forced my Lute, or broke my Glaſſes. Once, when it had forced the Lute, coming cloſe thereto, in order to try to repair it, I obſerved that the Spirit which iſſued out caught Fire at the Flame of the Candle, and continued burning with Violence as it iſſued out, in a Stream, which I blew out, and lighted again, alternately, for ſeveral times. I then had a Mind to try if I could ſave any of this Spirit, in order to which I took a turbinated Receiver, and putting a Candle to the Pipe of the Receiver whilſt the Spirit aroſe, I obſerved that it catched Flame, and continued burning at the End of the Pipe, though you could not diſcern what fed the Flame: I then blew it out, and lighted it again ſeveral times; after which

which I fixed a Bladder, ſqueezed and void of Air, to the Pipe of the Receiver. The *Oil* and *Phlegm* deſcended into the Receiver, but the Spirit, ſtill aſcending, blew up the Bladder. I then filled a good many Bladders therewith, and might have filled an inconceiveable Number more; for the Spirit continued to riſe for ſeveral Hours, and filled the Bladders almoſt as faſt as a Man could have blown them with his Mouth; and yet the Quantity of Coals I diſtilled were inconſiderable.

I kept this Spirit in the Bladders a conſiderable time, and endeavour'd ſeveral ways to condenſe it, but in vain. And when I had a Mind to divert Strangers or Friends, I have frequently taken one of theſe Bladders, and pricking a Hole therein with a Pin, and compreſſing gently the Bladder near the Flame of a Candle till it once took Fire, it would then continue flaming till all the Spirit was compreſſed out of the Bladder; which was the more ſurpriſing, becauſe no one could diſcern any Difference in the Appearance between theſe Bladders and thoſe which are filled with common Air.

But then I found, that this Spirit muſt be kept in good thick Bladders, as in thoſe of an Ox, or the like; for if I filled Calves Bladders therewith, it would loſe its Inflammability in 24 Hours, though the Bladder became not relax at all.